

Eugene

EMX EUGENE STA

Kane County

Randall/Orchard Corridor BRT Feasibility Study

October 26, 2011



Funded through the Energy Efficiency and Conservation Block Grant (EECBG) Program

of the

American Recovery and Reinvestment Act (ARRA)



STUDY OVERVIEW

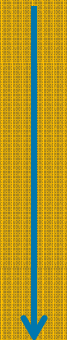
Purpose of Study

- Identify conditions required for successful BRT operation in 2040
- Evaluate potential benefits from BRT service in Randall/Orchard Road corridor



Elements of Rapid Transit

Rapid Bus



Full BRT

- Unique branding
- Widely-spaced “station stops” with superior amenities
- Speed and reliability improvements
- Quality access – all modes
- Frequent service – no schedule needed
- Low-floor vehicles, multi-door boarding
- Dedicated lanes

Rapid Bus



Full BRT

Why Bus Rapid Transit?

- Incremental implementation
- Improve quality of transit service
- Improve customer experience
- Shorten trip lengths
- Shift trips to transit
- Create vibrant, livable communities
- Foster economic development



Conditions for Successful BRT Projects

- Transit travel time competitive with automobile
- Unique branding to differentiate service
- Transit supportive land uses
 - Mixed use
 - Multistory development
 - Multimodal connectivity
 - Transit, pedestrian and bicycle access
- Major attractors in the corridor
 - Medical centers, employment centers, public institutions ...

Project Timeline

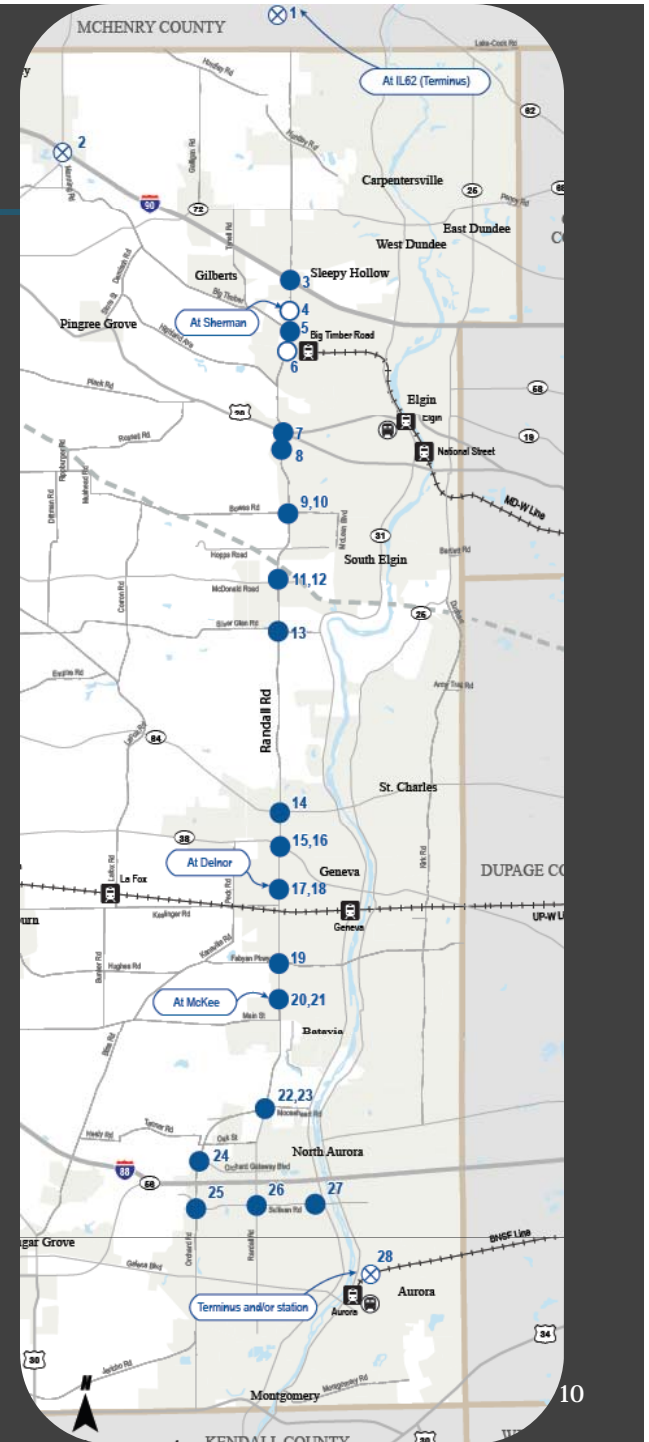
Visioning Workshop

- ↳ Identify potential BRT alignment
 - ↳ Conduct Quality of Kane Outreach
 - ↳ Establish conceptual future conditions
 - ↳ Model traffic conditions
 - ↳ Identify benefits and costs
 - ↳ Conduct Quality of Kane Outreach

DEVELOPMENT CONDITIONS

Visioning Workshop Results

- Identified 28 potential station locations
 - Preference for medium level densities
 - Preference for mixed-use retail with some mixed-use commercial/employment
 - Connections to both nearby activity centers and to other key destinations in the region












Conceptual Station Areas

- Minimum Operable Segment
 - Randall north of I-90 to Orchard & Sullivan
- 13 Station Areas
- Accommodate 40% of Sustainable Urban Area growth



Ref	Location	Net Buildable Area (Acres)	Station Development Typology
A	IL 72 to I-90 west of Randall	375	Mixed Use Employment (Office/Industrial)
B	Randall at Big Timber Road	113	Mixed Use Employment (Office/Medical)
C	Randall south of U.S. 20	113	Mixed Use Residential
D	Randall at Bowes Road	83	Mixed Use Retail
E	Randall north of McDonald Road	150	Mixed Use Employment (Office / Retail)
F	Randall at IL 64	105	Mixed Use Employment (Office / Retail)
G	Randall at IL 38	225	Mixed Use Retail
H	Randall at Keslinger Road	101	Mixed Use Employment (Institutional / Retail) (Destination)
I	Randall at Fabyan Parkway	135	Mixed Use Retail
J	Randall at Main Street (Batavia)	135	Destination (Entertainment/Hospitality)
K	Orchard/Randall at Mooseheart Road	165	Mixed Use Employment / Destination (Entertainment/Hospitality)
L	Orchard at I-88 (North) / Orchard Gateway Blvd.	353	Mixed Use Employment (Office / Retail)
M	Orchard at I-88 (South) / Sullivan Road	131	Mixed Use Employment (Office / Retail)

Intensity of Development	Dwelling Units per Acre	Out-of-County Examples		Kane County Examples
		Birds Eye View	Zoomed In View	
Medium-Low	6-10	 <p>Longmont, CO. 8.8 DU/Acre</p>		 <p>South Elgin, 8 DU / Acre</p>
Medium-High	12-16	 <p>Shaker Heights, OH. 15.2 DU/Acre (219 units, 14.4 acres)</p>		 <p>Batavia, 14 DU / Acre</p>
High	18-22	 <p>San Jose, CA. 21.0 DU/Acre (98 Units, 4.6 acres)</p>		 <p>Elgin, 19 DU / Acre</p>

Sources: Out-of-county examples from Lincoln Institute of Land Policy, Visualizing Density, <http://www.lincolnst.edu/subcenters/visualizing-density/gallery/index.aspx>. Kane County examples from Kane County, The Suburban Challenge: Making the Land Use/Transportation Connection. Presentation to the Canopes for New Urbanism Illinois State Conference, 01/22/2007.

Conceptual BRT Station Area Development

Corridor demographic allocations

- **Medium Density Scenario**
 - Population - ↑ of 51,266 above 2040 allocations
 - Household - ↑ of 17,515 above 2040 allocations
 - Total jobs in station areas – 41,220
- **High Density Scenario**
 - 50% ↑ from Medium Density Scenario

TRAFFIC MODELING

Transit Use Modeling Assumptions

Transit Mode Share Assumptions

- Current Assumption
 - less than 1% transit mode share
- *What if* - BRT Scenario Assumptions
 - 4% County-wide (based on CMAP)
 - 14% Station to Station (based on MPC BRT study)



Model Results - Development Induced Trips

County-Wide Vehicle Trips

- No increase in transit (transit share <1%)
 - Medium density scenario - 4% ↑ in trips
 - High density scenario - 7% ↑ in trips
- With 4% overall transit share +14% transit use BRT station to station
 - Medium density scenario - 0.5% ↓ in trips
 - High density scenario - 2% ↑ in trips

Model Results – *What if Scenario*

- **Corridor increase in trips**
 - Medium density \uparrow 130%
 - High density \uparrow 270%
- **Majority of trips in Randall/Orchard corridor are station to station**
 - Medium density scenario $>$ 65%
 - High density scenario $>$ 70%



Significance of Model Results

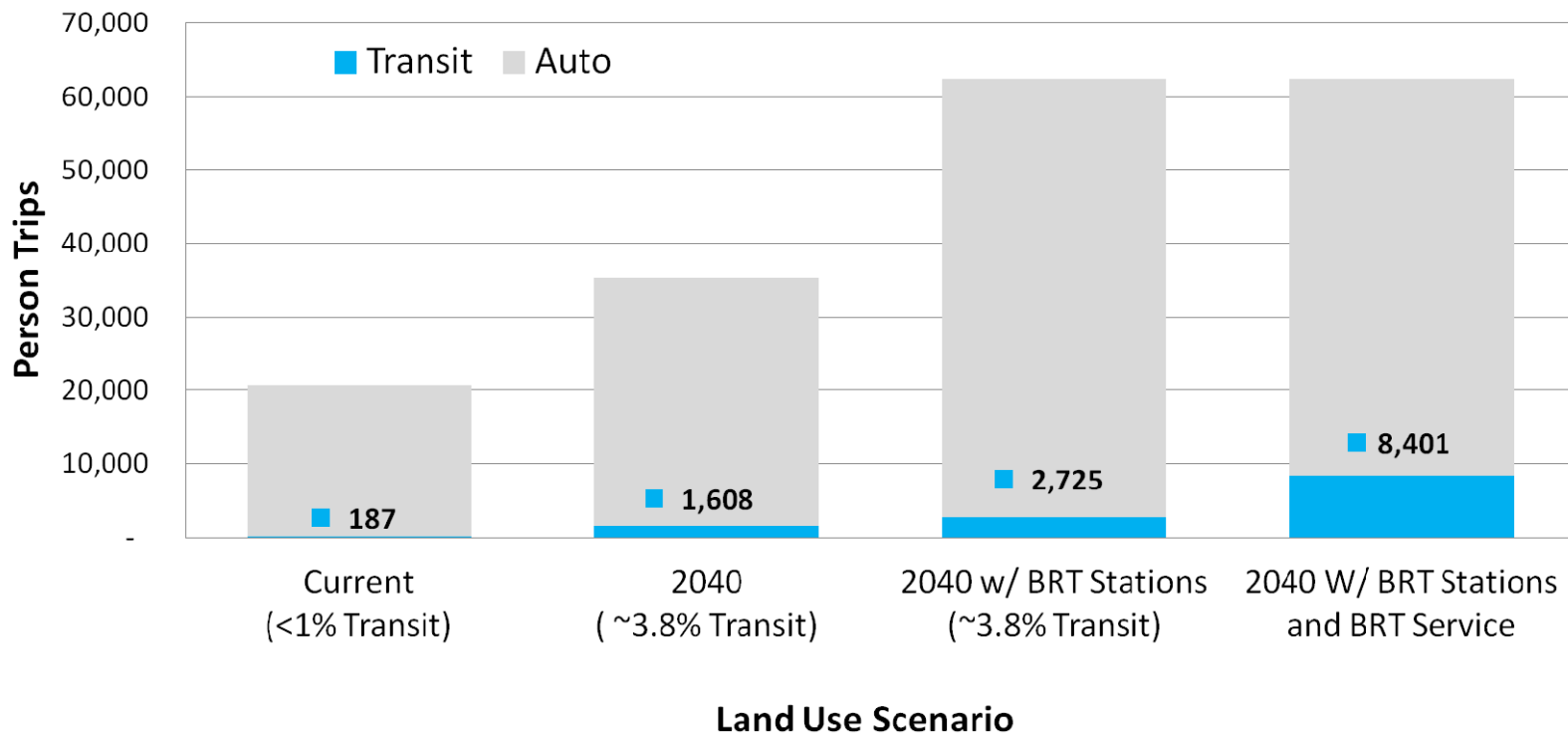
- Concentration of trips in corridor is station to station
- More travel options
- ↓ Per capita VMT
 - 15% to 35% decreases in corridor relative to 2040 Plan
- Further results will indicate (TBD)
 - Energy savings
 - Air quality benefits
 - Travel time savings

Corridor Transit Use

Daily Person Trips in the Randall/Orchard Corridor

(North of I-90 to South of I-88)

Internal Trips Only (does not include through trips)



BRT Improvements

- Location of Queue Jumps/TSP
- Length of Queue Jumps
- Travel Time improvements



Next Steps

- **Refinement of benefits analysis**
 - Travel times
 - Air quality
 - Energy Savings
- **Corridor infrastructure improvements**
 - Queue jump lanes
 - Signal priority
- **Public Outreach**
 - Quality of Kane
 - Stakeholders
- **Delivery to County Board**

